Notable Grand Rounds
of the
Michael & Marian Ilitch
Department of Surgery

Wayne State University
School of Medicine

Detroit, Michigan, USA

Eliza W. Beal, MD

GASTROINTESTINAL CANCER DISPARITIES

April 3, 2024

About Notable Grand Rounds

These assembled papers are edited transcripts of didactic lectures given by mainly senior residents, but also some distinguished attending and guests, at the Grand Rounds of the Michael and Marian Ilitch Department of Surgery at the Wayne State University School of Medicine.

Every week, approximately 50 faculty attending surgeons and surgical residents meet to conduct postmortems on cases that did not go well. That “Mortality and Morbidity” conference is followed immediately by Grand Rounds.

This collection is not intended as a scholarly journal, but in a significant way it is a peer reviewed publication by virtue of the fact that every presentation is examined in great detail by those 50 or so surgeons.

It serves to honor the presenters for their effort, to potentially serve as first draft for an article for submission to a medical journal, to let residents and potential residents see the high standard achieved by their peers and expected of them, and by no means least, to contribute to better patient care.

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Gastrointestinal Cancer Disparities

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April 3, 2024

The talk from which this paper was derived was delivered by Dr. Beal at the Wayne State University School of Medicine Surgical Grand Rounds on April 3, 2024.

Introduction

The fight against disparities in GI cancer care is a multifaceted challenge that requires a concerted effort from all stakeholders involved in health care delivery and research. By embracing a culturally relevant approach to health communication and intervention design, we can make significant strides in ensuring that all individuals, regardless of their racial or ethnic background, have equal access to life-saving cancer screenings and treatments.

But while culturally targeted interventions and research are needed to actively address and mitigate health disparities, achieving health equity is not only a matter of identifying them: It also requires a commitment to developing and testing solutions that are culturally sensitive and patient-centered.

Definitions

Addressing disparities in health and healthcare, particularly in the context of gastrointestinal cancers, necessitates a foundational understanding of several key terms and concepts that frequently emerge in discussions about health and healthcare disparities.

The Centers for Disease Control and Prevention (CDC) defines health equity as the state in which every individual has a fair and just opportunity to attain their highest level of health.[1] Achieving this state requires the rectification of historical and contemporary injustices and the dismantling of barriers—economic, social, or otherwise—that impede access to healthcare and contribute to health disparities. This requires changing systems and policies that have resulted in genera-

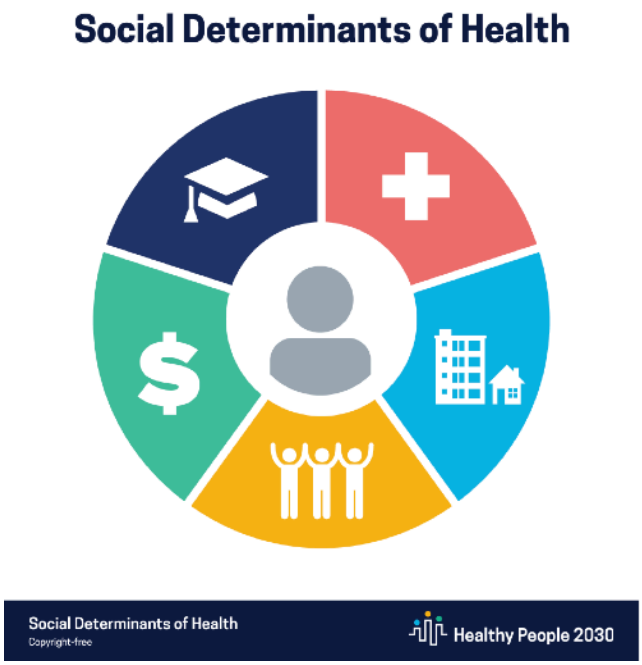
[1] CDC website: https://www.cdc.gov/healthequity/whatis/index.html, accessed March 30, 2024.

tional injustices that give rise to racial and ethnic health disparities.

Health disparities are characterized as preventable discrepancies in disease burden, injury, violence, or the opportunity to attain optimal health, disproportionately affecting groups marginalized by their socioeconomic status, racial or ethnic background, geographic location, or other socially determined circumstances.[2] They are found among racial and ethnic minority groups, people with disabilities, women, people who are LGBTQI+ (lesbian, gay, bisexual, transgender, queer, intersex, or other), people with limited English proficiency, and more.[3]

These disparities are not merely clinical outcomes but are deeply entrenched in systemic inequalities and social determinants of health—non-medical factors that have a profound influence on health outcomes. Adopting the World Health Organization's framework, social determinants of health (SDOH) encompass the environmental conditions into which individuals are born, grow, live, work, and age, as well as the broader forces at play, including economic policies, social norms, and political systems.

The CDC's Healthy People 2030 initiative underscores the significance of addressing social determinants of health by aiming to foster environments that support the health and well-being of all individuals. With objectives spanning five domains—*economic stability, educational access and quality, healthcare access and quality, neighborhood and built environment, and social and community context*—Healthy People 2030 embodies a



comprehensive approach to improving health and narrowing health disparities by focusing on upstream factors traditionally outside the direct purview of healthcare delivery.[4]

Aims

This paper examines the disparities surrounding gastrointestinal cancers and the systemic inequities and social determinants that contribute to disparate health outcomes among various population groups. Examining these disparities through the lens of health equity may serve to illuminate the paths toward mitigating them and thus achieving a more equitable healthcare landscape.

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[2] Office of Disease Prevention and Health Promotion. (2021, August 11). Healthy People 2020: Disparities. U.S. Department of Health and Human Services. Retrieved August 13, 2021, from https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities

[3] *Ibid*.

[4] Office of Disease Prevention and Health Promotion: "Healthy People 2030: Building a healthier future for all. https://health.gov/healthypeople, accessed March 30, 2024.

Racial Disparities in Cancer: Structural Determinants and Outcomes

A poignant reflection on the state of cancer disparities in the United States is encapsulated in a quotation from Siegal et al (2024) published in the *Journal of the American Cancer Society* and frequently cited. The quote underscores the profound impact of structural racism and socioeconomic inequalities on cancer occurrence and outcomes across different racial and ethnic groups:

> "Racial disparities in cancer occurrence and outcomes are largely the result of structural racism, resulting in long-standing inequalities in wealth that lead to differences in exposure to risk factors and access to high-quality cancer prevention, early detection, and treatment services. Segregation and discriminatory policies in criminal justice, housing, education, and employment continue to perpetuate disparities in health and well-being, contributing to significant variations in cancer incidence, stage at diagnosis, and patient outcomes."[5]

In 2020, the disparities in poverty levels among different racial and ethnic groups in the United States further exemplify the intricate link between socioeconomic status and health outcomes. Notably, 25% of American Indian and Alaska Native individuals lived below the federal poverty level,[6] along with 17% of Black and Hispanic populations, in stark contrast to White and Asian communities.[7] This persistent poverty is not only a determinant of poor health but also ranks as a leading cause of death, closely associated with higher cancer incidence, later stage diagnosis, and worse outcomes.

The discussion of health disparities often extends beyond the immediate realm of healthcare to encompass a broad range of historical and systemic factors. The United States' long history of racial classification has provided a rich dataset for examining these disparities, which are often pronounced and reveal complex underlying causes.

Demographic Diversity and Cancer Disparities in the KCI Catchment Area

KCI is an NCI-Designated Comprehensive Cancer Center serving the state of Michigan. In 2014, KCI affiliated with McLaren Health Care and there are now 15 KCI sites serving a catchment area covering 46 of Michigan's 83 counties (**Fig. 1**, previous page). The

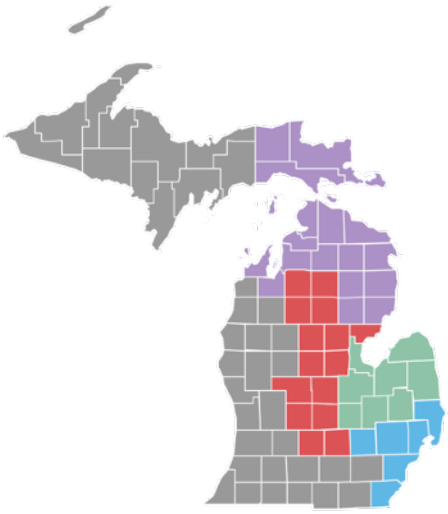


Fig. 1. KCI Catchment Area

[5] Siegel RL, Giaquinto AN, Jemal A. (2024). Cancer statistics, 2024. *CA Can J Clin*. doi:10.3322/caac.21820

[6] Sarche, M., & Spicer, P. (2008). "Poverty and health disparities for American Indian and Alaska Native children: current knowledge and future prospects." *Annals of the New York Academy of Sciences*, 1136, 126–136. https://doi.org/10.1196/annals.1425.017

[7] This contrast is illustrated in Fig. 3 of Shrider, Em (2023): "Poverty Rate for the Black Population Fell Below Pre-Pandemic Levels." Article dated September 12, accessed at https://www.census.gov/library/stories/2023/09/black-poverty-rate.html.

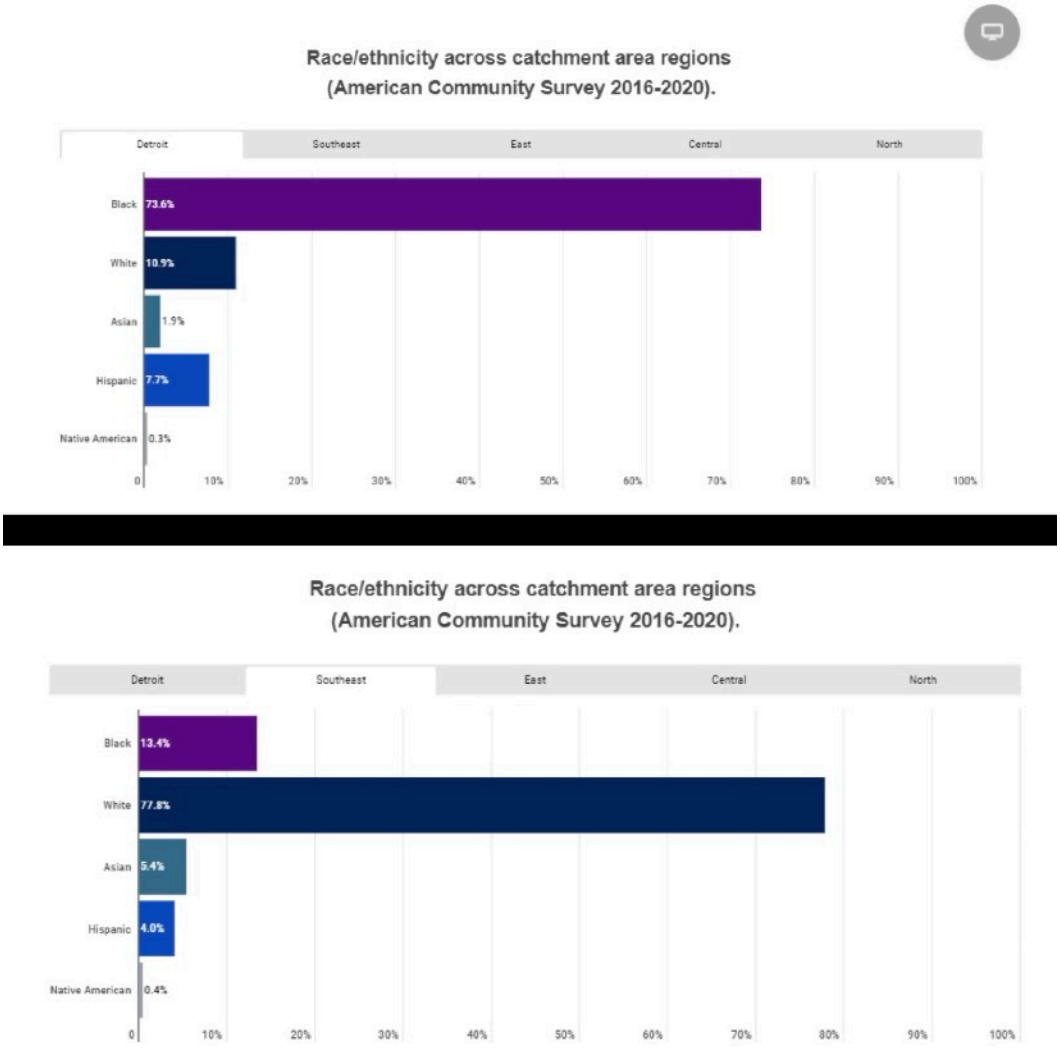


Fig. 2. Race/ethnicity across catchment area regions
Source: American Community Survey 2016-2020

catchment area is defined as the 46-county area that is home to 95% of our patients. KCI sees one third of all new cancer patients in the catchment area.

The KCI catchment area is home to 6.7 million residents, a population larger than that of 33 U.S. states, highlighting the significant impact of its research and clinical services.[8] The area's diversity is critical to understanding the disparities in cancer incidence and outcomes. The catchment area, aligned with the Michigan Department of Health and Human Services' Community Health Assessment regions and including the city of Detroit, is segmented into five regions to better address its heterogeneity.

The Southeast Michigan region, excluding Detroit, and the city of Detroit itself, highlight

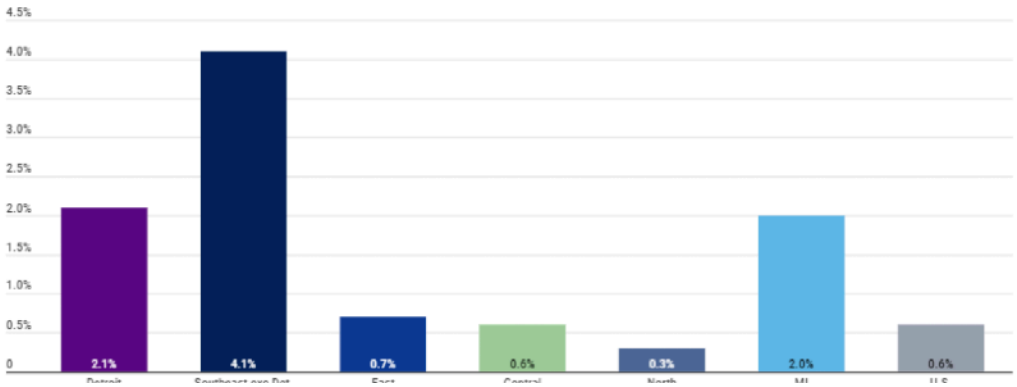
[8] Catchment area data are accessible at https://www.karmanos.org/karmanos/catchment-data

the profound disparities in cancer outcomes linked to demographic and socioeconomic variables. **Fig. 2** (previous page) shows 2022 data for the city of Detroit and for the Southeast region. According to U.S. Census 2022 estimates,[9] Detroit is the largest city in the state, with 620,376 residents. Detroit is a resource-challenged area, with a median household income of $34,762 and 31.8% of residents living in poverty compared to 13.4% in the state of Michigan. Almost 60% of the census tracts in Detroit are categorized as persistent poverty[10] census tracts (PPCTs). The National Cancer Institute (NCI) defines PPCTs as areas wherein 20% or more of the population has been below the federal poverty line since 1990. **Fig. 2** shows that 71.6% of Detroit residents are Black, 10.9% are White, 1.9% are Asian, 7/7% are Hispanic and 0.3% are Native American. This distribution is drastically different than in the Southeast region excluding Detroit, where 13.4% of residents are black and 77.8% are white.

Furthermore, the Southeast Michigan region has a significant Middle Eastern and North African (MENA) population, not officially recognized as a distinct racial or ethnic group by the U.S. Office of Management and Budget. This lack of recognition hinders coordinated cancer surveillance efforts for this group, despite Michigan having the second-largest MENA population (310,087) in the United States, after California (Census data). Of those, 139,751 (45%) are in Wayne County, home to the cities of Detroit and Dearborn. At 7.8%, Wayne County has the highest percentage of MENA residents of any county in the US. **Fig. 3** shows the percentage of persons with Arab ancestry across KCI catchment regions.

The demographic intricacies within the KCI catchment area, including a notable percentage of residents with Arab ancestry, particularly in Wayne County, underscore the complexity of addressing cancer disparities in a diverse population.

A critical examination of the incidence and mortality rates for colorectal, pancreas, and liver cancer within the KCI catchment area reveals significant disparities among racial and ethnic groups. In Detroit, black individuals exhibit the highest incidence rates for all three cancer types mentioned (**Table 1**, next page). This pattern is consistent with the



Fig, 3. Arab ancestry across KCI catchment regions (American Community Survey 2016-2020).

[9] https://www.census.gov/quickfacts/fact/table/detroitcitymichigan/PST045222

[10] https://cancercontrol.cancer.gov/research-emphasis/supplement/persistent-poverty-notice

Race	Colorectal	Pancreas	Liver
All Races	43.7 (38.7, 48.6)	17.2 (14.1, 20.2)	11.3 (8.9, 13.6)
White	38.7 (24.7, 52.7)	12.9 (5, 20.8)	9.7 (3.1, 16.3)
Black	49.1 (43.2, 55.1)	19.4 (15.7, 23.1)	12.2 (9.4, 15)
Hispanic	26.8 (5.8, 47.8)	11.8 (-1.1, 24.8)	12.1 (-0.9, 25.2)

Table 1. GI Cancer Incidence By Racial/Ethnic Group in Detroit

Race	Colorectal	Pancreas	Liver
All Races	36.7 (36.1, 37.3)	14.2 (13.9, 14.6)	5.8 (5.5, 6)
White	36.1 (35.4, 36.8)	13.8 (13.4, 14.2)	4.9 (4.7, 5.2)
Black	41.8 (40.2, 43.5)	17.1 (16, 18.1)	8.9 (8.2, 9.6)
Hispanic	30.3 (26.7, 34)	11.5 (9.3, 13.8)	12.6 (10.2, 15)
Asian	22.6 (19.6, 25.6)	8 (6.2, 9.8)	6.4 (4.9, 8)
Native American	38.9 (30.4, 47.5)	25.2 (18.3, 32.1)	9.8 (5.7, 14)

Table 2. GI Cancer Incidence By Racial/Ethnic Group in Catchment Area

Race	Colorectal	Pancreas	Liver
All Races	16.9 (13.8, 19.9)	12.6 (10, 15.2)	6.5 (4.7, 8.3)
White	13 (5, 21.1)	8.8 (2.4, 15.2)	5.6 (0.6, 10.6)
Black	19.4 (15.7, 23.1)	14.5 (11.4, 17.7)	7.3 (5.1, 9.5)
Hispanic	7.4 (-2.4, 17.3)	7.9 (-3.7, 19.4)	4.1 (-3.5, 11.7)

Table 3. GI Cancer Mortality By Racial/Ethnic Group in Detroit

Race	Colorectal	Pancreas	Liver
All Races	13.7 (13.3, 14)	12.3 (12, 12.6)	4.3 (4.1, 4.5)
White	13.1 (12.7, 13.5)	12.3 (11.9, 12.6)	3.8 (3.6, 4)
Black	18.3 (17.2, 19.4)	14.1 (13.1, 15)	6.3 (5.7, 7)
Hispanic	10.1 (7.9, 12.2)	10.1 (7.9, 12.3)	7.3 (5.4, 9.2)
Asian	7.6 (5.8, 9.4)	5 (3.5, 6.5)	2.5 (1.6, 3.5)
Native American	10.4 (6.1, 14.7)	10.6 (6.2, 15)	8.1 (4.2, 12)

Table 4. GI Cancer MORTALITY By Racial/Ethnic Group in Catchment Area

broader catchment area data, where the highest incidence rates for colorectal cancer are observed among black individuals, pancreas cancer among Native Americans, and liver cancer among Hispanic individuals (**Table 2**). The incidence data is complemented by mortality rates (**Tables 3 and 4**), which further underscore the disparities in cancer outcomes. In Detroit, mortality rates for these cancers are again highest among black individuals, a trend that extends to the broader catchment area with some variation among cancer types. **Fig. 4** (next page) graphs the statistics.

These statistics not only highlight the disparities in cancer outcomes but also raise critical questions regarding the underlying causes of these disparities. The disparities in GI cancer mortality and incidence rates pose a complex challenge, rooted in a combination of social determinants of health and access to healthcare services. The interplay between these factors and the access to screening, diagnosis, evaluation, and treatment for cancer contributes significantly to the observed disparities. Identifying the specific causes of these disparities is a daunting task, further complicated by the need to develop effective interventions.

Research into the disparities in cancer care has begun to shed light on these issues, revealing

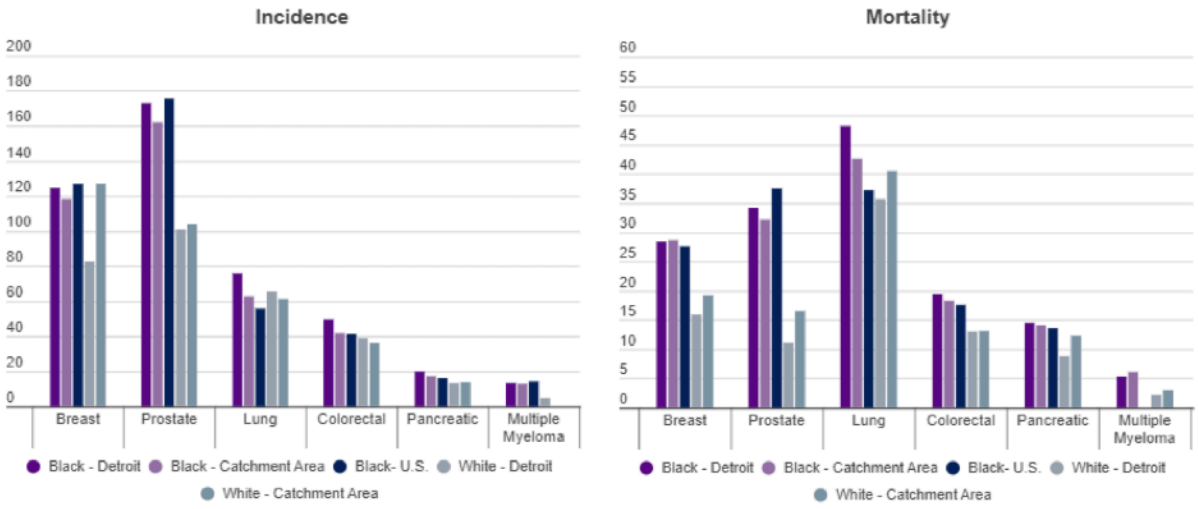


Fig. 4. Incidence & mortality per 100,000
Black-White differences across select cancers, Detroit and catchment area
Source: Michigan Cancer Surveillance Program & State Cancer Profiles, 2016-2020

that social determinants of health play a pivotal role in shaping cancer outcomes. However, a comprehensive understanding of the multifaceted nature of cancer care disparities requires a detailed examination of the entire continuum of cancer care, from prevention and early detection to treatment and survivorship.

Research

The body of research examining disparities in access to gastrointestinal cancer care is growing, with studies exploring various aspects of the healthcare delivery system and its impact on different racial and ethnic groups. These studies illustrate the complexity of the problem and highlight the need for interventions that address the root causes of disparities. Examples of such research include studies on the impact of socioeconomic status on screening rates, the availability of culturally competent care, and the effects of healthcare policy on access to treatment.

Three studies, summarized below, exemplify the current efforts to understand and mitigate disparities in GI cancer care. By examining these studies, we can begin to appreciate the breadth of approaches being explored to address these critical issues and move toward more equitable cancer care outcomes for all individuals.

The first study identified a problem—disparities in liver transplantation for HCC, but did not provide or test a solution; the second study study proposed a solution and "tested" it using retrospective data; and the third study tested an a actual intervention (culturally targeted messaging to overcome medical mistrust).

1. Racial Disparities in Liver Transplantation for Hepatocellular Carcinoma

A pivotal study published in the *Journal of Hepatology Communications* in 2018[11] sheds light on the racial disparities present in the treatment of hepatocellular carcinoma (HCC), particularly concerning access to liv-

[11] Dakhoul L, et al. Racial Disparities in Liver Transplantation for Hepatocellular Carcinoma Are Not Explained by Differences in Comorbidities, Liver Disease Severity, or Tumor Burden.Hepatol Commun. 2018. PMID: 30619994

er transplantation, which is considered a potentially curative therapy. After controlling for factors such as comorbidities, liver disease severity, and tumor burden, the study found that racial disparities in liver transplantation for HCC disproportionately impacted Black patients. This investigation was conducted over a 14.5-year period at the Indiana University Academic Medical Center, encompassing all adult patients diagnosed with HCC. The study's demographics are shown in **Table 5**.

	Black (N=164)	White (N-1032)	P-Value
Demographics			
Age (years), mean (SD)	59.7 (9.8)	62.3 (10.3)	0.005
BMI (kg/m2), mean (SD)	27.4 (6.3)	29.0 (6.2)	0.001
Comorbidities			
HTN	64	54	0.02
No differences in gender, diabetes mellitus, dyslipidemia, CAD, PVD			

Table 5. Study demographics
Source: See footnote 5.

	Black (N=164)	White (N-1032)	P-Value
Liver Disease Characteristics			
MELD score, median (IQR)	11 (7)	11 (6)	0.16
Tumor Severity			
Tumor Size (cm)	5.3 (3.8)	4.7 (3.8)	0.05
BCLC stage (%)			0.06
A	25	24	
B	7	11	
C	47	44	
D	21	22	
Within Milan Criteria (%)	42	48	0.19

Table 6. MELD scores

The study analyzed clinical and pathologic characteristics of 1,196 patients, of whom 1,032 were White and 164 were Black. The Black patients were typically younger, had a lower Body Mass Index (BMI), and exhibited a higher prevalence of hypertension compared to their White counterparts. Overall, viral hepatitis and alcoholic liver disease were the most common etiologies in the cohort. HCV and/or alcohol were the underlying liver disease etiology in 77% of black patients and 49% of white patients. Non-alcoholic fatty liver disease was very rare in black patients with only 1% compared to 19% of white patients. (See **Fig. 5**, next page.)

Despite similar liver disease severity and tumor characteristics between the two groups, as indicated by Model for End-Stage Liver Disease (MELD) scores and Barcelona Clinic Liver Cancer (BCLC) staging, significant disparities were observed in treatment outcomes. See **Table 6**.

Black patients were significantly less likely to undergo liver transplantation than White patients (14% vs. 26%, respectively), and were more inclined towards palliative or hospice care compared to White patients. These differences in treatment outcomes were not explained by clinical, demographic, or tumor characteristics suggested that other factors, systemic in nature, contribute to these disparities.

Implications for Healthcare Policy and Practice

The findings thus emphasize the critical need to examine and address the systemic barriers that hinder equitable access to liver transplantation for HCC among racial and ethnic groups and the need for a reevaluation of current practices and policies to ensure that all patients, regardless of race, have equal opportunities to receive potentially curative treatments.

The disparities observed in this study serve as a sobering reminder of the complex interplay between social determinants of health and access to advanced medical interventions. It highlights the importance of develop-

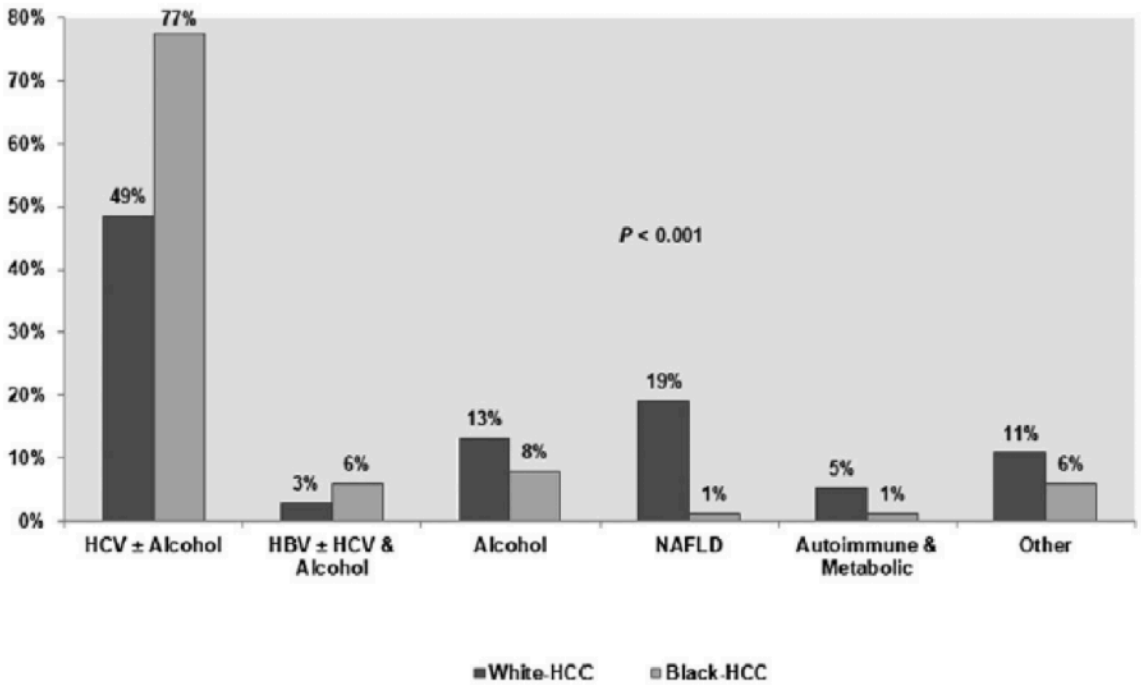


Fig. 5. Etiologies in the cohort

ing targeted interventions and policy changes that address the underlying causes of healthcare disparities.

Subgroup Analysis: Racial Disparities within Milan Criteria Eligibility

The Milan criteria serve as a benchmark for determining eligibility for liver transplantation, offering a framework (flow diagram at **Fig. 6**, next page) for assessing patients' suitability for receiving exception points to be prioritized higher on the transplant list. A subgroup analysis focused on patients with HCC falling within these criteria revealed stark disparities between Black and White patients in terms of transplantation outcomes.

Out of the patients meeting the Milan criteria, only 24% (16 of 68) of Black patients underwent transplantation, compared to 44% (210 of 474) of White patients. This disparity was further complicated by the commonality of alcohol and drug abuse as the primary reasons for transplantation exclusion, affecting both groups yet showing a significant discrepancy in denial rates. Specifically, Black candidates were declined for transplantation due to alcohol or drug abuse at a rate more than double that of White candidates (39% vs. 18%).

Furthermore, 15% of patients within the Milan criteria were never referred for liver transplantation, and 10% of those referred expressed disinterest in the procedure. The study uncovers additional social barriers, such as ongoing substance abuse, which, under local policy, necessitates six months of sobriety and the completion of an alcohol treatment program for candidates sober for less than two years. Other notable issues include lack of referrals, lack of interest, absence of insurance, and various other financial constraints.

These findings underscore that conventional metrics of disease severity and patient

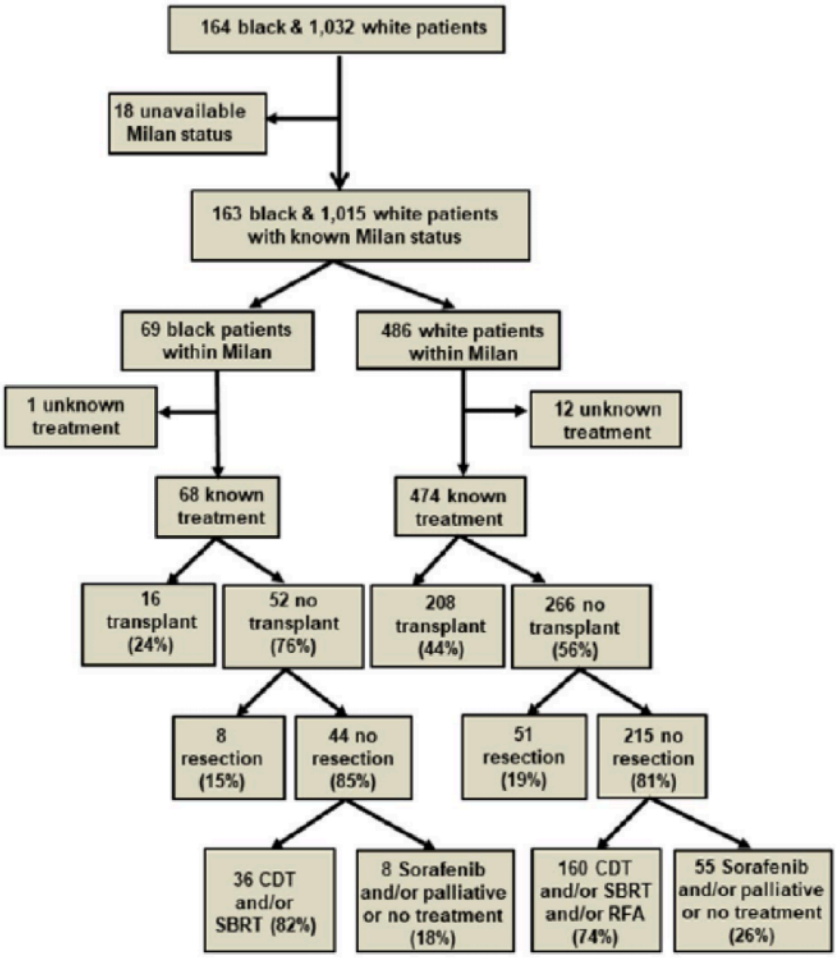


Fig. 6. Flow diagram comparing the proportion of patients within Milan criteria who did or did not receive surgical resection/liver transplantation in both races.
Source: Fig. 2 in Dhakoul et al (2018) (see footnote 11)

health status do not fully account for the observed racial disparities in access to liver transplantation. The pronounced impact of social determinants, including substance abuse policies, referral practices, and financial barriers, highlights the need for a comprehensive reevaluation of current policies and practices.

It is imperative to consider policy modifications that account for the complex interplay of social and health-related factors influencing transplant eligibility and decision-making. Policies emphasizing more inclusive criteria and support systems, aimed at mitigating the impact of social determinants on healthcare access, could play a pivotal role in reducing disparities. Additionally, enhancing education and outreach efforts to ensure patients are informed and interested in transplantation as a treatment option, alongside improving access to substance abuse treatment programs, could contribute to more equitable healthcare outcomes.

2. Disparities in Access to Clinical Trials for Pancreatic Cancer

A pivotal study published in the *Journal of Clinical Oncology* in 2022[12] examined the underrepresentation of diverse populations in clinical trials for pancreatic ductal adenocarcinoma (PDAC), particularly focusing on the role of eligibility criteria in perpetuating racial and ethnic disparities. Despite adjustments for disease prevalence, Black, Asian or Pacific Islander, American Indian or Alaskan Native, and Hispanic patients have been significantly under-enrolled in PDAC trials in the United States. This underrepresentation not only raises concerns about social justice and equitable access to investigational therapeutics but also underscores the biological necessity for diverse participation due to variations in drug metabolism among different racial and ethnic groups.

The study authors investigated the impact of traditional eligibility criteria on the potential participation of a diverse patient population in pancreatic ductal adenocarcinoma (PDAC) clinical trials. Analyzing data from patients with PDAC who sought care at their institution between 2010 and 2019, the study found that traditional criteria disproportionately disqualified Black patients due to conditions such as hypoalbuminemia, HIV, Hepatitis B, and Hepatitis C status. Other factors, including renal dysfunction, recent coronary stenting, and uncontrolled diabetes, were also more likely to render Black patients ineligible, although these findings were not statistically significant. Interestingly, previous cancer treatment—which could exclude patients from trial participation—was less of a barrier for Black patients, primarily due to lower rates of neoadjuvant therapy received.

Implications and Potential Solutions

The study's findings suggest that traditional eligibility criteria for clinical trials may inadvertently exclude racial and ethnic minority patients, particularly Black patients, without a solid medical rationale. This exclusion not only limits the diversity of trial participants but also potentially biases the outcomes and effectiveness of new treatments across different populations. To address this disparity, the authors propose the adoption of selectively less restrictive eligibility criteria, which could significantly improve the representation of racial and ethnic minorities in PDAC clinical trials.

This study contributes to the growing body of evidence highlighting the need for systemic changes in the design and implementation of clinical trials. By reevaluating and modifying eligibility criteria, researchers and regulatory authorities can work towards more inclusive and equitable research practices that ensure diverse representation. Such changes are crucial for advancing our understanding of treatment efficacy across different demographic groups and for moving towards more personalized and effective cancer treatments.

Proposed Changes to Eligibility Criteria

The authors of the study proposed several modifications to traditional eligibility criteria for clinical trials on PDAC (see **Table 7**, next page), aiming to reduce racial disparities in trial participation. Key recommendations include:

- **Replacing Serum Creatinine with Creatinine Clearance:** This change is advocated to provide a more accurate assess-

[12] Riner AN, Girma S, Vudatha V, Mukhopadhyay N, Skoro N, Gal TS, Freudenberger DC, Herremans KM, George TJ, Trevino JG. Eligibility Criteria Perpetuate Disparities in Enrollment and Participation of Black Patients in Pancreatic Cancer Clinical Trials. *J Clin Oncol*. 2022 Jul 10;40(20):2193-2202. doi: 10.1200/JCO.21.02492. Epub 2022 Mar 22. PMID: 35316089; PMCID: PMC9273372.

Traditional Eligibility Criteria	Guidelines on Eligibility Criteria	Proposed Criteria Changes
Creatinine ≤ 1.5 mg/dL or CrCl > 30 mL/min	Assess CrCl rather than serum creatinine CrCl > 30 mL/min if renal toxicity and clearance are not of concern (adapted from the study by Lichtman et al[15])	Remove creatinine and use CrCl > 30 mL/min
History of any other malignancy within the past 3 years (except nonmelanoma skin cancer and in situ carcinomas [excluding breast])	Patients with prior malignancy should generally be included Patients with previously treated malignancy should be eligible if treatment was ≥ 2 years ago and no evidence of disease is present Patients should be eligible if concurrent malignancy is stable and does not require therapy (adapted from the study by Lichtman et al[15])	Remove if currently off therapy, particularly for PDAC, given that it is likely more lethal than the previous malignancy
Known HIV infection	Patients should be eligible if CD4+ T-cell counts ≥ 350 cells/μL No history or remote history (past 12 months) of AIDS-defining opportunistic infection Concurrent treatment with effective ART with > 4 weeks of treatment plus HIV viral load < 400 copies/mL Not receiving specified ART, excluded because of drug-drug interactions (adapted from the study by Uldrick et al[16])	Remove if well-controlled and antiviral medications have low risk of drug-drug interactions (or are able to be substituted/changed)
Known HBV or HCV	HBV: if chronic infection with active disease, assess eligibility for anti-HBV therapy and require initiation prior to clinical trial enrollment HCV: patients should be eligible if antiviral treatment is concurrent or has been completed and viral load is undetectable OR in the setting of incurable cancer, if HCV is stable and investigational treatment is not expected to exacerbate HCV infection (adapted from FDA Oncology Center of Excellence Guidance for Industry[20])	Remove if well controlled and anti-viral medications have low risk of drug-drug interactions (or are able to be substituted/changed)
Uncontrolled diabetes mellitus	No specific guidance	Remove as this can be better controlled in a relatively short period of time
Coronary stenting within the past 6 months	No specific guidance	Remove if asymptomatic, with preserved cardiac function and clearance from a cardiologist

NOTE. Traditional eligibility criteria that may be revised without compromising patient safety or clinical trial results are listed with conditions. Proposed criteria changes are adapted from recommendations of the ASCO-Friends of Cancer Research working groups and the Food and Drug Administration Oncology Center of Excellence Guidance for Industry.

Abbreviations: ART, antiretroviral therapy; CrCl, creatinine clearance; FDA, US Food and Drug Administration; HBV, hepatitis B virus; HCV, hepatitis B virus; PDAC, pancreatic ductal adenocarcinoma.

Table 7. Proposed Changes to Traditional Eligibility Criteria for PDAC Clinical Trials, Adapted From Updated Guidelines
Source: Table 1 in Riner et al (2022) (see footnote 12)

ment of kidney function relevant for drug safety considerations.

- **Revising Criteria Related to Prior Malignancies:** Patients with a history of other cancers within the past three years could be allowed to participate if they are currently off therapy, given the more lethal nature of PDAC compared to many other malignancies.
- **Adjusting Criteria for HIV, Hepatitis B, and Hepatitis C:** Removing these infections as automatic exclusion criteria, provided that the patient's disease is well-controlled and antiviral medications do not pose a risk of interaction with trial drugs.
- **Reconsidering Uncontrolled Diabetes:** Exclusion due to uncontrolled diabetes could be removed, as this condition can typically be managed and controlled swiftly with appropriate evaluation and intervention.
- **Reevaluating Cardiac Stenting Exclusion:** Patients with recent stenting could be considered for trial inclusion if they are

asymptomatic, have preserved cardiac function, and receive clearance from a cardiologist.

The retrospective application of these revised criteria to a cohort of PDAC patients demonstrated a potential to equalize eligibility rates between Black and White patients, thereby increasing the inclusivity of both groups in clinical trials (**Fig. 7**). This adjustment in criteria underscores the possibility of reducing racial disparities without compromising the safety or integrity of clinical studies.

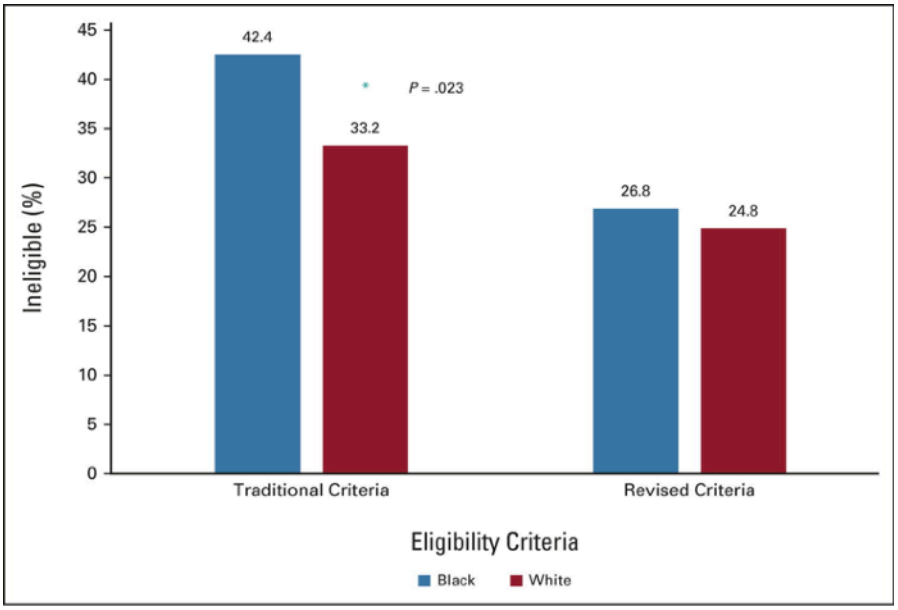


Fig. 7. Eligibility criteria
Source: See footnote 6

Future Directions and Implications

While the study's retrospective analysis provides a promising outlook on enhancing diversity in clinical trials, it also underscores the need for prospective evaluations and policy changes at both the national level and within individual trial designs. Advocacy for the strategic revision of eligibility criteria by investigators and engagement with pharmaceutical companies to adopt these changes could further the momentum towards more equitable clinical research.

The study on revising eligibility criteria for PDAC clinical trials illuminates a clear path towards diminishing racial disparities in clinical trial participation. By critically examining and modifying criteria that disproportionately exclude certain racial groups without sound medical rationale, researchers can enhance the diversity and, consequently, the generalizability of clinical trial outcomes. This approach not only addresses ethical considerations of equity and justice but also improves the scientific validity of research findings by ensuring they are reflective of the broader population.

3. Addressing Colorectal Cancer Screening Disparities through Culturally Targeted Messaging

Colorectal cancer (CRC) screening is a critical preventive measure that can significantly reduce mortality rates. However, in the United States, African Americans face the highest incidence and mortality rates from CRC among all racial groups, partly due to low screening uptake. Identified barriers include not only systemic issues such as lack of health insurance and less frequent provider recommendations but also deeply rooted concerns like fear, anxiety, and particularly medical mistrust. This mistrust, stemming from historical abuses and exploitation in medical research, significantly affects the African American community's willingness to engage in screening processes.

A study published in the Journal of Behavioral Medicine in 2023, conducted in Detroit, sought to examine the effects of medical mistrust on the receptivity of African Ameri-

can individuals to CRC screening messages and to evaluate whether culturally targeted health messaging could overcome these barriers. The intervention involved educational modules on CRC, including its etiology, risk factors, prevention methods, and screening recommendations. Participants were then exposed to message manipulations designed to assess their responses to general and culturally targeted messaging about CRC screening.

Notably, the study introduced a unique, culturally targeted message emphasizing personal will and resilience, traits deeply valued in the African American community. This message highlighted the role of individual choices in overcoming CRC disparities, thereby addressing medical mistrust by framing screening as an act of empowerment against historical and current injustices.

Key Findings

The study provides compelling evidence that culturally targeted messaging significantly improves the receptivity to colorectal cancer (CRC) screening among African Americans, especially those with high levels of medical mistrust. This research demonstrates that:

- Medical mistrust is a considerable barrier to CRC screening, with greater mistrust correlating with more negative attitudes toward screening.
- Culturally targeted messaging effectively enhances normative beliefs and reduces anticipatory racism among individuals with high medical mistrust, thereby potentially increasing screening uptake.
- The success of health communication strategies in encouraging CRC screening among African Americans hinges on their cultural relevance and sensitivity to the community's experiences and concerns.

These findings underscore the importance of developing and implementing culturally targeted health communication interventions to address disparities in CRC screening rates.

Implications for Healthcare Practice

Healthcare providers serving African American communities should consider incorporating culturally targeted messaging into discussions about CRC screening. The development of educational materials that employ culturally relevant approaches may significantly increase the effectiveness of efforts to promote CRC screening. Such strategies not only address the issue of medical mistrust but also contribute to dismantling the systemic barriers that contribute to health disparities.

Moving Beyond Identifying Disparities

The spectrum of studies examined in this paper—from those that identify disparities without proposing solutions, to those that suggest and retrospectively test solutions, and finally, to studies that design and prospectively evaluate interventions—highlights the evolving nature of research in this field. However, the journey does not end here. The critical next step is to move beyond the identification of disparities and towards the active development, implementation, and testing of interventions that:

- **Address the root causes** of disparities in GI cancer care.
- **Are patient-centered** and consider the specific needs and preferences of the communities they aim to serve.
- **Employ culturally tailored, multi-pronged strategies** that recognize and integrate the complexities of cultural, so-

cial, and systemic factors affecting health outcomes.

The study's preliminary findings suggest that culturally targeted messaging, especially those that resonate with the community's values and experiences, can effectively increase receptivity to CRC screening among African Americans. By acknowledging and addressing the role of medical mistrust, the intervention demonstrates the potential of tailored health communication strategies to mitigate barriers to screening and, consequently, reduce disparities in CRC outcomes.

This innovative approach to increasing CRC screening uptake among African Americans underscores the need for further research to refine and expand culturally targeted health messages. Future studies should explore the long-term impact of such interventions on screening rates and how they might be adapted for other at-risk populations facing similar barriers. Additionally, the role of medical professionals in reinforcing these messages and the broader implications for health equity warrant further examination.

Conclusions

To truly advance equity in GI cancer care, future research must focus on designing comprehensive interventions that are rigorously tested for their effectiveness in reducing disparities. Such interventions should be scalable, sustainable, and adaptable to different communities and healthcare settings. Collaboration among healthcare providers, researchers, patients, and community members will be crucial in developing innovative solutions that are both effective and culturally congruent.

The fight against disparities in GI cancer care is a multifaceted challenge that requires a concerted effort from all stakeholders involved in health care delivery and research. By embracing a culturally relevant approach to health communication and intervention design, we can make significant strides in ensuring that all individuals, regardless of their racial or ethnic background, have equal access to life-saving cancer screenings and treatments.

It is no longer enough to conduct studies that exclusively identify that disparities exist. Research is required both to identify and mitigate root causes of disparities in cancer care, and to design and test patient-centered, culturally-tailored, multi-prong interventions to improve disparities in gastrointestinal cancer care.

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